WORKSHOP

Training Worksheet	**Data Extraction and Filling out the GEMS/Food Template**
Organized by	**AIDSMO and GFoRSS, under the Arab Codex Initiative**
Location	**Muscat, Oman**
Dates	**30 – 31 July 2025**

This exercise uses published scientific literature on heavy metals in food.

Participants will work with the provided article to practice identifying, extracting, evaluating and completing missing information in order to prepare the dataset for standardized data sharing.

OBJECTIVE

Reliable and well-structured occurrence data are essential for developing evidence-based food regulatory decisions and conducting accurate risk assessments. They also play a key role in contributing to international standard-setting processes by providing data that reflect local, national, or regional contexts.

This workshop is designed to build the capacity of stakeholders in the Arab region to manage and prepare occurrence data for standardized data sharing. It will guide participants through best practices for identifying, extracting, and completing relevant data from **published scientific literature**, with the aim of contributing to global data platforms, like the GEMS/Food database, and supporting risk-based food safety decision-making.

OCCURRENCE DATA FROM PUBLISHED SCIENTIFIC LITERATURE

In this exercise, examine the provided article

Tahboub, Y. R., Al-Ghzawi, A. A.-M. A., Al-Zayafdneh, S. S., & AlGhotani, M. S. (2022). Levels of trace elements and rare earth elements in honey from Jordan. Environmental Science and Pollution Research, 29(8), 11469–11480. https://doi.org/10.1007/s11356-021-16460-3

- The objective is to use the provided information to complete the “Data Extraction Template” by identifying and filling in any missing data.
- For the food mapping, use the GEMS/Food database system

  (https://extranet.who.int/gemsfood/Search.aspx)
- For any missing information, discuss the most appropriate ways to obtain it; for example, by reaching out to relevant sources such as the laboratory department or other data holders.

INSTRUCTIONS FOR COMPLETING THE EXERCISE

Preparation Steps:

1. Identify the contaminant(s) analyzed (e.g., lead)
2. Identify the specific food item tested (e.g., chili powder, black pepper, etc.)
3. Gather all relevant analytical information (method, results, LOD, LOQ, etc.)
4. Structure the data using the GEMS/Food template (Excel or online)

Key Fields in GEMS/Food Excel Template

Field	What You Need to Fill In	Example
Tier	1 = Official data, 2 = Research, 3 = Preliminary/Pilot data	Tier 2 = University research
Year	Year of publication or data submission	2024
Year of Sampling	When the samples were collected	2022
Country	Use a full country name	Oman
Region	WHO region name	Near East
Type of Contaminant	Categories such as heavy metal, pesticide, etc.	Heavy metal
Contaminant	Specific contaminant name	Lead
Food Group	General GEMS/ Food category	Herbs, spices and condiments
Food Identifier	Specific GEMS/Food name	Turmeric, root
Food Name	Specific food name when it is not found in the adopted classification, or any additional specification	Zaatar
Country of Origin	Country of origin (imported, locally produced)	Locally produced
State of Food	Form of food tested (e.g., fresh, ground, powder, as consumed)	Powder
Sampling plan	Sampling methodology	Targeted vs random
Number of Samples	Number of individual samples	1 or more
Analytical Method	Method used in lab (e.g., ICP-MS, AAS)	ICP-MS
LOD / LOQ	Limits of detection and quantification (with unit)	LOD: 0.05 mg/kg
Results	Result values: min, max, average, individual	Avg: 0.26 mg/kg
Unit	Always use standardized units like mg/kg or µg/kg	mg/kg
Authors / Source	Study authors, lab name, or official body	Ministry of Health, Oman
Study Objective	Why the data was collected	National monitoring program

Tier Explanation (Arabic-region example)

Tier	Meaning	Arab Region Example
Tier 1	National official program, with full QA	GCC-wide surveillance by Ministries of Health
Tier 2	University or government research	Study from Cairo University, 50 spice samples
Tier 3	Pilot or small-scale data	NGO or private lab with <10 samples, limited QA

Practical Tips for Arab Region Participants

Tip	Details
Use Arabic food names in the "Local name"	But also provide the English name in "Food Name" for standardization.
Align with Codex codes if available	Especially for spices, cereals, dried fruits.
Get help from national Codex Contact Point	They may help validate Tier level or codes.
Use the WHO GEMS Food Template	Ask for the latest Excel format or use the WHO web submission tool.
Ensure consistent units (mg/kg)	Convert from μg/kg if needed (1 mg/kg = 1000 μg/kg).